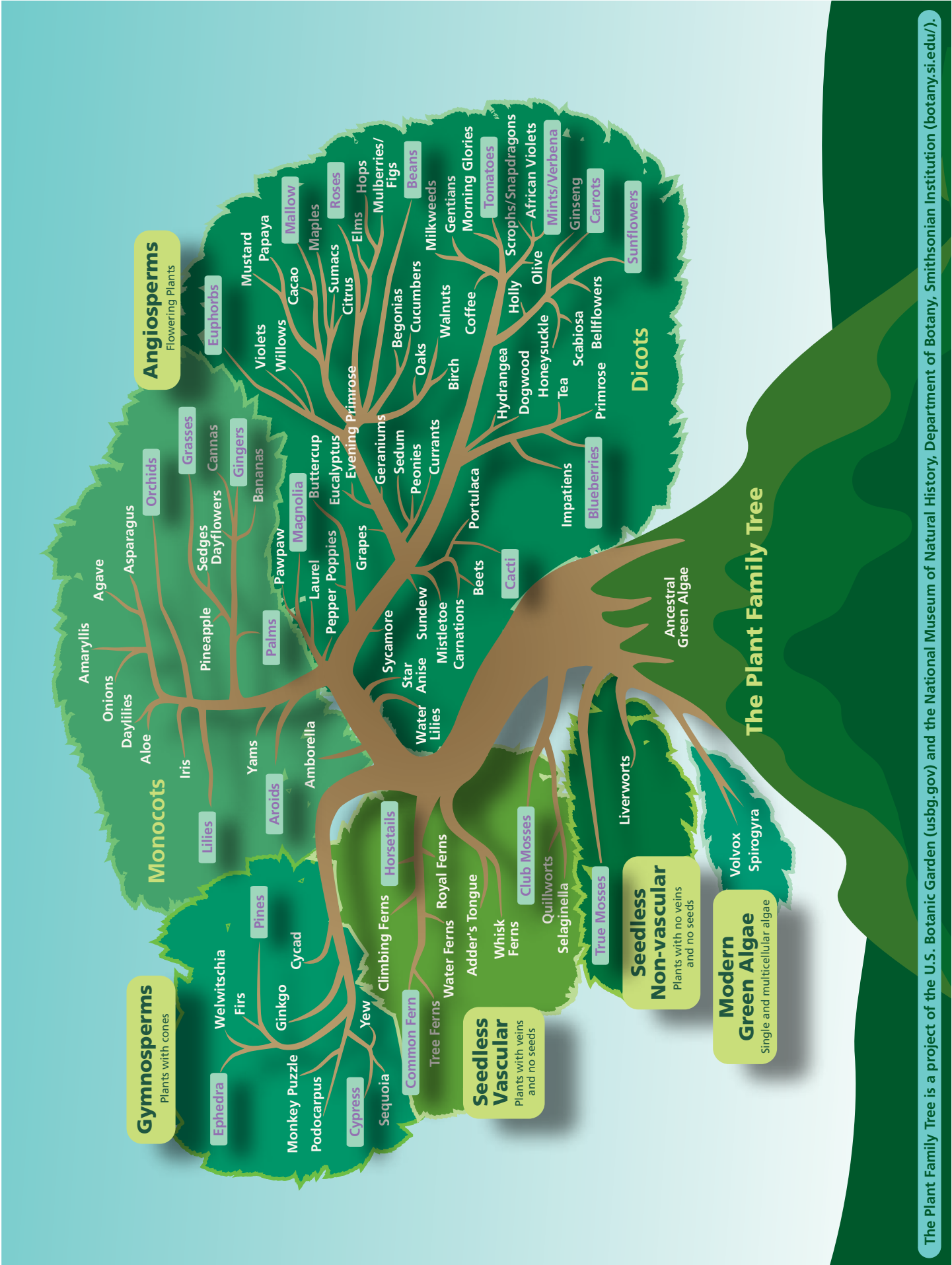


How Plants Work: Plant Multiplication

Student's Edition



UNITED STATES
BOTANIC GARDEN



Plant Multiplication

How do plants reproduce?

Exploring the Conservatory...

Make your way to Garden Primeval. Each of you will be assigned one of the following recognized plant groups: ferns, mosses, angiosperms, or gymnosperms. Familiarize yourself with your designated plant group (hint: see Plant Family Tree).

Draw, in the space provided, what you think is an example of a plant in the plant group you were assigned?

Plant Name: _____

- Ferns: Examine ferns for sori (brown dots on the underside of the fern leaves). Compare how they look on different kinds of ferns.
- Mosses: See if you can find moss with sporophytes. Sporophytes are $\frac{1}{4}$ to $\frac{1}{2}$ inch tall (see image of moss with sporophytes on next page).
- Gymnosperms: are plants whose seeds are not enclosed in an ovule (like a pine cone). Gymnosperm means "naked seed."





Think Tank! What is the role of sori in the reproductive strategy in ferns?

Sori: Small, circular, rust colored patches on the underside of fern blades that release spores for reproduction.



Think Tank! Did anyone find moss with sporophytes? What is the difference between a sporophyte and a gametophyte?

Sporophyte: Spore-producing phase in the life cycle of a plant.

Gametophyte: A form of the plant that produces egg and sperm to form the sporophytes in the reproductive cycle.



Moss with sporophytes



Think Tank! Find the Norfolk Island Pine and a Cycad. What plant group do they belong to?

There is a dinosaur that lives in the Garden Primeval. Can you find him? Think about why the dinosaur was placed in the Garden Primeval section of the Conservatory.



Think Tank! Ferns and mosses grew when dinosaurs lived. Look at the panels on the walls in Garden Primeval. How did ferns and mosses survive while dinosaurs became extinct?

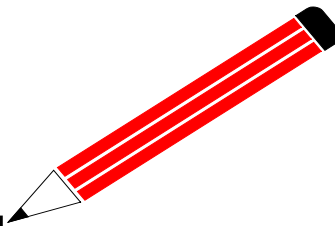


Become a Savvy Plant Sleuth!

Follow your teacher or adult leader into the Medicinal Plants Room.

Find a flower in the process of turning into a fruit or a plant bearing fruit.
Sketch the plant in the space below.

Plant Name: _____



Which of the major recognized plant groups is represented by flowering plants?



Think Tank! Talk to your group. What happens to plants before and after flowering?

Do you think plants that reproduce by seed have an advantage and why?



Dig Deeper...

Explore the Plant Family Tree that was provided to you. With your group, discuss how the plant family tree is divided. Can you find your major plant group?



Think Tank! How might your new knowledge about plant multiplication help you figure out why one plant group family is larger than another?

What Did You Learn?

Consider the following statement: Plants, like animals, must reproduce and create offspring to ensure species survival. However, unlike animals, plants cannot travel around to find mates.



Think Tank! What reproductive strategies do plants use for survival? Is any strategy better than any other? If so, which one? If not, why?

